

## **VALIDATING LIGHTWEIGHT MATERIALS FOR AUTOMOTIVE APPLICATIONS**

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### **KEYWORDS**

Automotive, Moldflow, Autodesk, Helius PFA, Mold Filling, Simulation, Lightweighting, Future of Making Things, NASTRAN, Advance Materials, Carbon Fiber, Fiber Filled, Polymer, Thermoplastic, Thermoset, Injection Molding, Compression Molding

### **ABSTRACT**

10 years ago, designs were safe, over-designed, over-dimensioned, and over-weight, and more expensive to produce and manufacture than they had to be, or needed to be.

The Future of Making Things is here and now, and has drastically changed the why we design, the materials we used, and the manufacturing technologies that produce the products of today. For instance, the use of composites materials and foaming technologies are leading the charge to lighter and more efficient manufacturing. 10% reduction here, 20% reduction there, and suddenly there is a huge mass reduction to an automobile.

For anyone to really take advantage of the current generation of plastics and advanced materials, you have to understand the manufacturing process and how to optimize it.

The use of Simulation can provide insights into all aspects of product manufacturing and performance, while helping to make critical decisions that need to be made during those crucial design phases. Moving decision making earlier into the process to make the move from concept to manufacturing more efficient and much faster, than ever before.